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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,810	04/16/2004	Yonggang Jin	27-012	8695

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EXAMINER	
EDMONDSON, LYNNE RENEE	
ART UNIT	**PAPER NUMBER**
1725	

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/825,810	JIN ET AL.	
	Examiner	Art Unit	
	Lynne Edmondson	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/15/06*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-10* is/are allowed.

6)☒ Claim(s) *11-19* is/are rejected.

7)☒ Claim(s) *20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 17 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The type of material (solder with or without voids) to be reflowed does not further limit the reflow apparatus.

2. In claims 11-20, the term system is interpreted as an apparatus for performing soldering for examination purposes.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 11-13 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakao et al. (USPN 5188280).

Nakao teaches a system for soldering a part comprising a conveyor, means for replacing air around an unsoldered part with inert gas, means for replacing the gas with vacuum, means for replacing the vacuum with gas which can be used for cooling, an input lock chamber (19) and an output lock chamber (31) and a vacuum reflow chamber. The gases are presumably the same. As the soldering can be performed in a vacuum, the apparatus is capable of forming solder bumps with very low void volumes. Although the reference teaches soldering of a circuit board, it is noted that the object soldered does not further limit the apparatus (figures 1 and 2, col 5 lines 18-37 and col 6 lines 20-28).

5. Claims 11-13 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishikawa et al. (USPN 5516031).

Nishikawa teaches a system for soldering a part comprising a conveyor for moving the part, means for replacing air around an unsoldered part with inert gas, means for replacing the gas with vacuum, means for replacing the vacuum with gas which can be used for cooling, an input lock chamber (10) and an output lock chamber (12) and a vacuum reflow chamber. The gases are presumably the same. As the soldering can be performed in a vacuum, the apparatus is capable of forming solder bumps with very low void volumes. Although the reference teaches soldering of a circuit board, it is noted that the object soldered does not further limit the apparatus(figure 1, col 5 line 59 – col 6 line 30, col 7 lines 13-18 and col 10 lines 21-24).

6. Claims 11-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Pekol (USPN 5573174).

Pekol teaches a system for soldering a part comprising a conveyor, means for replacing air around an unsoldered part with inert gas, means for replacing the gas with vacuum, means for replacing the vacuum with gas which can be used for cooling, an input lock chamber and an output lock chamber and a vacuum reflow chamber. The vacuum employs pumps (col 7 lines 40-58). The gases are presumably the same. As the soldering can be performed in a vacuum, the apparatus is capable of forming solder bumps with very low void volumes. Although the reference teaches soldering of a circuit board, it is noted that the object soldered does not further limit the apparatus (figures 1 and 6, col 3 lines 14-40, col 4 lines 10-18, col 4 line 40 – col 5 line 62).

7. Claims 11-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuki et al. (USPN 6732911 B2).

Matsuki teaches a system for soldering a part comprising a conveyor, means for replacing air around an unsoldered part with inert gas, means for replacing the gas with vacuum, means for replacing the vacuum with gas which can be used for cooling, an input and output lock chambers (225) and a vacuum reflow chamber. The vacuum employs pumps. The gases are presumably the same. As the soldering can be performed in a vacuum, the apparatus is capable of forming solder bumps with very low void volumes. Although the reference teaches soldering of a circuit board, it is noted

that the object soldered does not further limit the apparatus (abstract. figures 1 and 34A, col 2 lines 35-42 and col 29 line 17 – col 30 line 29).

Response to Arguments

8. Applicant's arguments with respect to claims 11-19 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

9. Claims 1-10 are allowed.

10. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gieskes (USPN 5031818, system), Kendziora et al. (USPN 3882596, system) and Demaray et al. (USPN 5799860, system).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson
Primary Examiner
Art Unit 1725

8/24/06

LRE